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ABSTRACT

Process oriented educational research has failed because it has relied too heavily on scientific method and has neglected "unscientific" but important questions. Educational research should study the society and how social forces influence teaching practices. Teachers can not be expected to change at will. They are constrained by pre-existing ideas of what education is all about which come from political and economic forces in the society. Schools, which appear to be neutral, are in important ways agents of the state, and the selection and training of teachers is similarly related to the state's interests. Yet research, particularly in capitalist countries, has failed to explore or discuss this. A part of these functions may even be viewed as symbolic violence--that is, the squelching of certain values of students in favor of others. The power relations within education allow this domination of certain values to occur. Teaching remains a way of socializing children into the middle class and of obtaining cultural and social conformity. The content and methods of teaching thus have specific reasons for existing as they do which researchers have neglected to study. (Notes and references included). (CD)

PEDAGOGICAL REPORTS

DANIEL KALLOS

THE STUDY OF PEDAGOGICAL PROCESSES

DEPARTMENT OF EDUCATION
UNIVERSITY OF LUND
S-220 07 LUND 7 SWEDEN

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RELATIVE MERITS OF VARIOUS TEACHING METHODS IN HIGHER EDUCATION.

AIM.

The principal aim of the project is to establish a theoretical framework for the description and analysis of various teaching methods in higher education.

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THE STUDY OF PEDAGOGICAL PROCESSES.

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S U M M A R Y

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This report presents a theoretical discussion of various issues pertaining to the study of pedagogical processes.

During the past decade researchers in pedagogics have paid an increasing attention to the teaching process. It is stated that the picture emerging from these efforts is not very satsifactory. The aim of the paper is to trace some of the reasons for the relative failure of process oriented research, and to sketch the outlines for a necessary re-orientation.

The traditional framework of research on pedagogical processes is discussed taking into account two closely interrelated issues. The first concerns the notions of "science" and "scientific research" and the second the conceptualizations of the pedagogical process as such.

An attempt to analyze pedagogical processes is presented. The framework developed emphasizes contextual determinants of pedagogical processes and relates processes to the functions of institutionalized educational systems within capitalist societies.

The perspective outlined is used in two examples. The first deals with the issue of observational techniques and the second with the contents of pedagogical processes. The discussion concerning the contents of pedagogical processes relates the theoretical perspective developed in this paper to notions regarding "classification and framing" that have been presented by Basil Bernstein.

Key words: Teaching methods. Theory of education. Higher Education. Process Oriented Research.

CONTENTS.

INTRODUCTION.

In 1963 the American Educational Research Association (AERA) sponsored the publication of an 1.218 page "Handbook of Research on Teaching" (GAGE, 1963). The Handbook summarized the knowledge within the field and provided some guidelines for future research efforts.

Several of the chapters of that Handbook have become minor classics in the field of educational research as such. Thus, the chapter by MEDLEY and MITZEL (1963) on the measurement of classroom behavior by systematic observation rapidly became the authoritative statement on the issues involved. The authors pointed to the relative scarcity of observational studies in spite of some efforts during the first twenty years of this century. They outlined a few cases where direct observation should be included - or even considered as crucial - in the research design. The first of these cases was research on teacher effectiveness.

> *"The proper role of direct observation in research on teacher effectiveness would seem to be as a means of learning something about the teaching process and its relationship to pupil learning. In most cases, though, the effects of teaching on pupils cannot be observed directly in normal classroom behavior, but must be assessed by other means. It is thus theoretically possible to distinguish effective teachers from less effective ones without observing them while they teach. Observation plays its proper role in research on teacher effectiveness when an attempt is made to gain insight into the nature of effective teaching. ... As research of this type yields fruit, it may also become possible to measure teacher effectiveness in process by direct observation of the teacher. This is not yet possible. Attempts to validate process criteria by correlating them with measured pupil growth have been, on the whole unsuccessful ... The identification of patterns of behavior which differentiate effective and ineffective teachers is still a worthwhile goal for research employing direct observation of classroom behavior."* (MEDLEY and MITZEL, 1963, p. 249)

This "worthwhile goal" was pursued by an increasing number of researchers. ROSENSHINE (1971) tried to summarize the accumulated knowledge (cf. also ROSENSHINE and FURST, 1971). Approximately 51 studies were reviewed, and the overwhelming majority of those had been published after 1963. Although a few consistent correlations between teacher behavior and student achievement were reported, it seems fair to conclude that the overall picture was a gloomy one. This conclusion holds true even if the criticism towards the review is taken into account (FLANDERS, 1973a; GALL, 1973; HEATH and NIELSON, 1974).

As this paper is primarily concerned with teaching at the university level it should perhaps be pointed out that the majority of studies concerning teacher effectiveness has dealt with lower levels of schooling. It may be strongly suspected, however, that similar conclusions would have been reached if higher education had been the target of research within this tradition.

The second case for observational studies of teaching was described in the following way by MEDLEY and MITZEL:

> *"Direct observation should play a crucial role in the most fundamental kind of research on teaching - the search for effective patterns of classroom behavior - the type of research most worthy of the name methods research. The latter term is used here to include any study whose purpose is to find out how a teacher should behave in the classroom to achieve more effectively one or more of the goals of instruction."* (MEDLEY and MITZEL, 1963, p. 249)

The authors note that the classic design for such research is "experimental", i.e. two or more methods of teaching are compared under experimental conditions. They furthermore state that most studies of this kind failed to include actual measurement of the independent variable - the teaching process. This makes possible that eventual failure to reject the null hypothesis is simply due to the fact that the methods of teaching actually employed were different from what was intended.

> *"But if appropriate measurements of the teaching behavior under each experimental condition are made by direct observation, this possibility can be eliminated. If desired, the relationship between the degree to which the method is applied and the amount of pupil gain can be studied directly."* (MEDLEY and MITZEL, 1963, pp. 248-249)

The distinctions between the two types of research situations where direct observation of the teaching process should be essential are somewhat unclear as "methods research" to a certain degree, according to the definition presented above, has to do with "how a teacher should behave". The main difference between the two situations outlined by MEDLEY and MITZEL (1963) are obviously not embedded in the questions asked, nor in the answers sought. The two types of research situations outlined, however, quite resemble the two strategies for research mentioned by CRONBACH (1957) in his discussion of scientific research in psychology. Research on "teacher effectiveness" is thus mainly "correlational", while "methods research" is more or less "experimental"[1)].

It has already been stated that the correlational approach has yielded a meager crop, and it could also be argued that the experimentalists have shared the same fate (cf. KALLÓS, 1971; 1973a). Even a merger between the correlational and the experimental approaches as in aptitude-treatment interaction oriented research on teaching could be regarded as rather unsuccessful from a number of viewpoints (KALLÓS, 1975a).

It should furthermore be noted that the conceptualization of teaching implicit in the quotations from MEDLEY and MITZEL (1963) is a narrow one. Teching is dependent on the teacher, and the goals (intentions) of teaching are defined in terms of changes in student achievement. This narrow view will be discussed in the following section of this paper.

The call for inclusion of data on the pedagogical process in research on teaching was echoed by several of the authors in the "Handbook of Research on Teaching" used as a point of departure for this paper. Even a cursory glance through the pages of the second edition of that handbook (TRAVERS, 1973) or through the pages of three recent books concerned with research on teaching (BROPHY and GOOD, 1974; DUNKIN and BIDDLE, 1974; GOOD, BIDDLE and BROPHY, 1975) establishes the fact that researchers during the past decade have paid an increasing attention to the teaching process. Published studies have furthermore often included observational data. This is also true about research on teaching in higher education, where e.g. DUBIN and TAVEGGIA (1968) strongly criticized "methods research" on account of its lack of inclusion of data concerning the actual process. And yet, in spite of an increased number of studies, of advances in research design, of technically improved data gathering instruments, and of an increased sophistication in the statistical domain the picture emerging is still far from satisfactory.

In this paper some of the reasons for the relative failure of process oriented research will be traced, and the outlines for a necessary re-orientation will be sketched.

THE TRADITIONAL FRAMEWORK OF RESEARCH ON PEDAGOGICAL PROCESSES.

Any discussion of the traditional framework of research on pedagogical processes obviously must deal with two closely interrelated issues, which only at a superficial level might be analytically separated.

The first of these issues concerns the notions of "science" and "scientific research" which govern our efforts of accumulating data. The second issue has to do with the implicit or explicit conceptualizations of the pedagogical process as such.

In a series of papers I have discussed these issues at length (KALLÓS, 1973a; 1973b; 1974, 1975a; 1975b; KALLÓS and LUNDGREN, 1972; 1974; 1975) using different areas within the field of pedagogical research as illustrative examples.

On the issue of what is scientific and what is not, the previous discussions explicitly pointed to a break with the "narrow view of science" (DUNKEL, 1972), especially if such a view was coupled to the idea that the variables of such research in pedagogics in their essence are "psychological" (KERLINGER, 1969).

In spite of a growing criticism against a narrow philosophy of science as a basis for pedagogical research, voiced by e.g. a number of prominent educational philosophers (e.g. THOMAS, 1972), research seems to continue much along the same old traditional lines. The meager results of such research are even acknowledged by its proponents (e.g. SHULMAN, 1970), but the alternatives proposed are still well within the established lines of "scientific research". Developments in the domain of meta-theory are substituted for almost endless discussions about the refinement of methods. Method becomes theory and by that process reality is lost. If a serious critique against the dominant paradigm is at all recognized by educational researchers, it is in most cases countered by asking the critic to provide an alternative in the form of a new book of recipes to be as naively used as the one it is going to substitute.

It is, however, promising that at least a few of the scholars working within the field of pedagogical process analysis seem to recognize these dilemmas. In a paper entitled "Is Classroom Interaction Research Worth the Effort Involved? " NUTHALL (1974) thus recognizes that research on teaching has been criticized for being "poor research". It has even been stated that research

on teaching cannot be "scientific" (EBEL, 1967). In a comment on such accusations against research on teaching NUTHALL states:

> *"The difficult situation which has been reached in this research has not been caused by the unreliability of the data, nor by the complexity of the classroom situation, but by the commitment of researchers to traditional research procedures and 'accepted' criteria of proper scientific methodology. By taking for granted that the criteria for good scientific procedures and data analysis are well established and beyond dispute, we have been led into asking the wrong kinds of questions and searching for the wrong kinds of answers."* (NUTHALL, 1974, p. 3)

It is rather easy to agree with this ddescription of the situation. The solutions proposed by NUTHALL (1974) are, however, far less acceptable.

In view of the fact that criticism towards using a "positivist" philosophy of science (cf. KOLAKOWSKI, 1972) as a base for pedagogical research has been voiced so frequently, it is necessary to ask why such a critique is largely neglected in many of the capitalist countries. On the one hand we may perhaps speak of an aspect-blindness and of the powerful influences of a certain mode of thinking cultivated by university courses, examinations, textbooks, etc. On the other hand it is obvious that the power relations within the educational research community must be taken into account. The liberal idea of "freedom of inquiry" has its visible and invisible boundaries expressed e.g. by statements on what is to be considered as "good scientific research" and what is not. In a paper on different theories of social and educational change PAULSTON (1975) thus notes:

> *"Marxist theory, by and large, has always been viewed as a legitimate political philosophical-cumtheoretical system in Western Europe, regardless of one's ideological orientation. In the United States it has been largely ignored... Although this tradition continues, there is a growing if limited and begrudging acceptance in the academy of Marxist theory and Marxian analysis in the study of social and educational change..."* (PAULSTON, 1975, p. 43)

The "scientific" paradigm (KUHN, 1970) exerts a powerful influence also on the perception of the phenomena of interest. This fact can be well illustrated by investigating the relations between pedagogics and psychology in the area of pedagogical process analysis (KALLÓS and LUNDGREN, 1975). Another example is embedded in the common definition of instruction as a series of events promoting learning within the individual, with the corollaries that the teacher is the arranger of the external conditions necessary for learning to occur (e.g. GAGNÉ, 1970). If the area

of classroom observation is taken as an example, it might be stated that the instruments used define the resulting picture. But the instruments used are based upon certain ideas about the phenomena of interest. The claim that there exists an objective language of observation separated from the theoretical one, is simply not valid if existing techniques for the study of classroom processes are used as a standard.

If the study of the relative merits of various teaching methods is used as a further example of traditional process oriented research, the influence of the "scientific" paradigm on the nature of the questions asked is equally clear. Part of the research in this area has been concerned with the search for methods that are superior to other methods across subjects (conceived both as individuals and/or contents). In other instances researchers have aimed at establishing stable (replicable) interactions between aptitudes and methods of instruction. Studies of these types have been discussed and criticized in earlier papers (KALLÓS, 1973a; 1973b; 1974a). A common denominator of such studies seems to be that teaching (or instruction) is studied in such a way that the question of "why?" a certain "method" is implemented, and "how?" it is implemented are simply not answered seriously. The whole issue of implementation is reduced to a question of experimental manipulability and control (cf. KALLÓS, 1973b). This in its turn implies that patterns of teaching - at least at the molar level - may be changed at will by the teacher (with or without the consent of the students). "Bad teaching" simply exists because teachers are "unaware" of what "good teaching" is, or because they are insufficiently trained, or because their "trait pattern" (teacher aptitudes) make them unsuitable for the job[2)].

The definitions of "good" and "bad" teaching are dealt with as superficially. It is taken for granted that teaching aims at providing the student with opportunities to develop in e.g. the cognitive, affective, and psycho-motor areas as far as his abilities go. The goals in these respective areas are only discussed technically, i.e. in terms of possibilities for devising appropriate external conditions. Discussions of relevance are likewise reduced to technical questions, e.g. in terms of "demand analyses", "job analyses", etc.

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Questions and aswers of the kinds that are briefly outlined above are those commonly asked within the narrow epistemology. Tho-

se questions that are not asked are on the other hand most commonly regarded as "unscientific" perhaps by labelling them as value issues.

MEDLEY and MITZEL (1963) tried to argue in favour of the inclusion of observational process data in studies to solve some of the problems encountered in research on teacher effectiveness and on teaching methods. At least in the area of research on teacher effectiveness such data have now been collected, but with rather minimal success in altering our knowledge in spite of some claims to the contrary (e.g. GOOD et al, 1975).

The explicit position in this paper is that this is mainly due to the fact that the traditional framework of research was too narrow and that accordingly, important questions concerning the pedagogical process were never asked. It is simply not feasible any more to cry out for more research of the same kind that has been tried in vain earlier, or to attribute failure to lack of sophistication in the areas of design and methodology. Of course, it is true that many studies are poorly executed and may justly be said to have

> *"... serious design and methodological deficiencies that make it difficult to draw any confident conclusions from them."* (GOOD et al, 1975, p. 54)

But, even at least rather sophisticated studies in the area of pedagogical process analysis have produced inconsistencies and a very confusing picture. These conclusions also hold true in the area of "methods research" which perhaps is even less developed than the study of teacher effectiveness. Studies of the efficiency of teaching methods in higher education provide a pertinent example here, where the same depressing tunes are played over and over again by reviewers of research (cf. e.g. MCKEACHIE, 1963; DUBIN and TAVEGGIA, 1968; JOHNSON et al, 1975). Thus, even if methodological deficiencies are prominent in the area of research on teaching methods, it still seems highly probable that the meager results are mainly due to the unhappy marriage between a "narrow view of science" and a likewise narrow conceptualization of the nature of the pedagogical process. Our general assumption is then that the inclusion of process data within the traditional framework, would not significantly alter the situation prevailing in pedagogical research, because the kind of observational data used within this framework mirror both the scientific paradigm and the narrow view of teaching. Still it has been claimed that the mere inclusion of process da-

ta might pull the trick in a number of research areas in education. Thus, evaluation studies should include process data in order to be responsive and illuminative according to one group of experts (CAMBRIDGE MANIFESTO, 1972).

The negative statements above could be interpreted both as a condemnation of the whole field of pedagogical process analysis and of the use of direct observation. This is, however, not my intention. The study of pedagogical processes is an important area of pedagogical research, and observational methods are essential within that area. The crux of the matter is the choice of problems and the selection of appropriate strategies to cope with them. DAHLLÖF (1974) discussed the role of pedagogical process analysis within educational science. It is rather easy to agree with many of the arguments in favour of process oriented research put forward by him, but the notes of caution sounded by him should also be recognized.

Pedagogical research should aim at a description of existing pedagogical practices and at working out theories which enable us to explain the causal relationships that give birth to these practices. At the macro level the immediate causes are linked to the political and economical structure of the society. Pedagogical research should furthermore aim at analyzing the space of options open to various social forces within the present structure and its possible dynamics. Such an analysis has as its logical next step research which aims at describing a limited number of possible alternative strategies and the consequences of their eventual implementation. It should furthermore be recognized that pedagogical research in our society takes place within the limits of the existing social distribution of work. This means that research is a profession carried out by an academically trained labour force with access to economical and intellectual resources and institutionally more or less clearly attached to the state apparatus and thereby to the ruling class. It is, of course, impossible for one researcher or a group of researchers to change that situation. Even research based on a materialistic conceptualization can, within our society, not avoid these institutional conditions and this distribution of work. The discussion of research on pedagogical processes that follows should be judged with these statements in mind.

THE CONTEXT FOR THE STUDY OF PEDAGOGICAL PROCESSES.

All of us have spent hours, weeks, and years in classrooms. First as students, then perhaps as teachers, and still later as researchers. As teachers many of us were inclined to forget our experiences at the opposite side of the desk. And as researchers many of us tend to react towards the classroom as if we were visiting some strange planet where secrets and hidden treasures were awaiting discovery.

In spite of the years that separate our different experiences much seems unaltered. We know from systematic compilation of knowledge that certain patterns of teaching are seemingly stable over the years and across subjects and grades (cf. HOETKER and AHLBRAND, 1968). We may or may not share JACKSON's (1968) insight as he reflects on what teaching really is:

> *"As we think of the total range of the teachers's activities and the amount of time he spends doing various things, we are led to wonder whether the teacher's primary concern is learning, after all."* (JACKSON, 1968, p. 161)

At the same time many of us know from in many instances bitter experiences that it is true that

> *"It is axiomatic that the teacher is the most influential person in the classroom."* (AMIDON and HUNTER, 1967, p. 3)

From such a point of departure it is perhaps not astonishing that researchers have tried to establish relationships between teacher behaviors and student outcomes, even if they acknowledge that "axioms" like that quoted above do not necessarily imply

> *"... that the teacher is the only important variable, or even the most important one..."* (GOOD et al, 1975, p. 7)

The power and influence of the teacher is indeed a prominent aspect of the pedagogical process. In the literature it is most often implicitly or even explicitly assumed that the teacher can change his "role" or his behavior almost at will, and that the range of possible actions is almost limitless. Thus AMIDON and HUNTER (1967) end their book on how to improve teaching via the introduction of an observational system ("VICS") with the following statement:

> *"It will be seen that the Verbal Interaction Category System for analyzing verbal behavior in the classroom offer teachers, future teachers, and supervisors a tool which can provide objective data about teaching behavior. Objective feedback is a necessary component of teacher growth and change."* (AMIDON and HUNTER, 1967, p. 220)

The issue is, of course, not that simple. The "objective feedback" may contain many different messages. These are, however,

determined by the observational system used. The system is in its turn dependent on a certain view of teaching, teachers, and students. These views may or may not be relevant for all possible aspects of the pedagogical process and the persons engaged in the process. Furthermore it can be stated that "feedback", "micro-teaching", changes in "teacher education" etc. have all been proposed measures in order to change teacher behavior. But the actual behaviors possible in the classroom are constrained and directed by decisions imposed at levels above the process. Such decisions define the options available to the teacher, and these are by no means limitless. The decisions are furthermore of a kind that may be changed; in some instances even as a result of attempted changes in classroom practises by a group of teachers.

In a number of earlier papers an idea, originally presented by DAHLLÖF (e.g. 1971) has been discussed in relation to the study of curricula and pedagogical processes. In this perspective the teaching process is regarded as constrained and directed by pedagogical frame factors which are introduced at various levels in the educational system (e.g. KALLÓS, 1973a; 1973b, 1974; 1975a; 1975b; KALLÓS and LUNDGREN, 1975). The previous discussions may be summarized and somewhat expanded as a number of statements concerning the proper context for the study of pedagogical processes[3)].

1. Pedagogical processes at the micro level are to be regarded as artifactual and, accordingly, whatever regularities that can be demonstrated are the products not of "nature" but of "man" and may be changed by altering one or several of the determinants of the process (cf. GOWIN, 1972; 1973; SIMON, H.A., 1969).
2. Pedagogical processes at the micro level are constrained as to contents, time, range of possible interactions between students and between teacher and students, size of the group involved, qualifications of the persons involved by various frames introduced at levels above the actual process. The frames determine the options available to teachers and students in the pedagogical relationship.
3. Any pedagogical system should be analyzed taking into account the macro to micro dimension. This dimension may be conceived as a decision matrix. Decisions at lower levels in that matrix are in their turn constrained by decisions at higher levels.

4. Frames concern tangible (and observable) aspects of the pedagogical system. They are material. They are not ideas or thoughts, but perhaps in at least some instances expressions of ideas and thoughts in terms of decisions concerning tangible aspects of the pedagogical system.
5. The level at which a certain frame is instituted, and the nature of the decisions taken may be regarded as overt expressions of the political and economical structure of the state as it pertains to the pedagogical system. The decisions taken are, however, in many instances expressed ideologically or legitimized by the use of idelogical jargon. At the level of appearance the objective function or meaning of a certain decision may thus be obscured or mystified. The apparent neutrality of schools is expressed through their manifest function of transmission of knowledge, skills, and socially accepted values within an apparently neutral organizational framework. These manifest functions are in part observable in terms of the frames in operation.
6. The concept of frame must be understood dialectically. In that context it may be noted that decisions about frames can be altered, e.g. as a result of practice. The limits of possible change are not endless and at the level of the individual (teacher or student) they concern insignicant aspects of the pedagogical system.

   The exact influence of a certain frame is furthermore contextually dependent. This means that a single frame must always be studied in conjunction with the other frames imposed at the corresponding level (cf. point 3 above). The frames define an operating space for planning and subsequent actions by teachers and students (cf. point 2 above). The uses of that space are - from the point of view of the teacher - dependent on his perception of the proximal frames (frames at the level immediately above the teaching process) and his ideas about teaching (in their turn shaped and upheld by the same forces that influence the decision about frames), and finally on his knowledge of different courses of action (e.g. in terms of teaching strategies or methods). It is, of course, not unimportant to note that the frames also define and regulate the power relations within the classroom. It should finally be noted that the teacher's perception of the fra-

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mes, his ideas about teaching, etc. also influenced by the selection and training of teachers -- processes which are by no means neutral.

7. The actual importance of a set of frames must be judged in terms of its objectively definable effects upon subsequent planning and action (cf. point 6 above). This is obviously an empirical question, and at certain levels of analysis even an idiosyncratic one.
8. Any pedagogical system is changing over time. A proper understanding of that system - and its frames - must accordingly rest upon a historical analysis. In many instances in the fields of curriculum and teaching this has wrongly been conceived as the history of "ideas" or that of certain "famous men", or as a merely chronological issue.
9. Frames may vary between and within countries as to the areas of decision, the level within the state bureaucracy at which a certain decision is taken, and as to the contents of the decisions. The concept of frame thus offers a tool for meaningful comparative studies between different parts of a pedagogical system (compulsory schooling and higher education) or between nations. But it also follows that it is impossible to describe an educational system in general terms only, if we want to present a model that can be used for comparative purposes. This means - to put matters differently - that the characteristics of educational systems at the level of appearance are idiosyncratic to an important extent. In its turn this is in part explainable by reference to history, and to another part by reference to the fact that different solutions at the level of appearnace may satisfy similar (or identical) requirements. Thus the objective functions of the school systems of the highly idustrialized countries of the Western World seem highly similar, but the solutions show differences.

The context for the study of pedagogical processes inherent in the points presented above emphasize, among other things, the necessity of an analysis of the functions of educational systems within a certain society as a basis for all pedagogical research. Pedagogical processes - and the pedagogical system as a whole - cannot be treated as if existing in a space of its own.

PROCESSES AND THE EDUCATIONAL SYSTEM.

The American educational economist GINTIS (1972) noted that

> *"Educational reformers commonly err by treating the system of schools as if it existed in a social vacuum."* (GINTIS, 1972, p. 72)

This does not imply that "society" is never mentioned by e.g. writers in the fields of teaching or curriculum, but that society is regarded as e.g. an organism with demands and needs that at least partly are to be met and satisfied by educational measures. The negligence and ignorance of the political and economical determinants at the same time sets the stage for a treatment of pedagogical issues in an idealistic or voluntaristic manner. Teaching can be changed - it is for instance argued - if only teachers knew better and were willing to change their roles. Another aspect of the sloppy way of thinking, that is unfortunately so characteristic in writings within pedagogics, is illustrated by those who argue that the objective functions of schools are expressed in statements about objectives in e.g. committee reports, curriculum guides etc. Yet another implication is that teaching is regarded as solely concerned with growth and development of individuals. Accordingly, the teaching process is in such instances often regarded as an aggregate of dyadic relations between teacher and taught.

These fallacious views - as a basis for a general theory of teaching - can perhaps at least partly be understood (at the level of the individual scholar) as an expression of a situation where the objective functions of pedagogical systems within the society are not commonly discussed, nor properly understood or analyzed.

At a general level an attempt to perform such analyses is inherent in the works of several critical political economists working in the area of education (ALTVATER und HUISKEN, 1971; HUISKEN, 1972; MASUCH, 1973; as well as in case studies presented by e.g. HEINRICH, 1973; FISCHER, 1974). These attempts help us in understanding the educational system in a macro perspective, but in most instances leave out the contradictory and complex reality of everyday life in schools. Of the sources mentioned it is probably HUISKEN (1972) who has most to offer the researcher primarily interested in problems at the level of actual teaching[4)].

There is a risk inherent in applications of ideas as those men-

tioned above to problems at the micro level, That risk means that it is tempting to look upon teaching as a process directly derivable from the economical and political structure of the society. Such derivations are at least to some extent possible at the level of curriculum, but problems arrive at the level of teaching operations.

Another attempt at analyzing the functions and the mechanisms in operation within educational systems has been presented by BOURDIEU and PASSERON (1970). Their approach might perhaps be integrated with the macro approaches mentioned here, and provide us with a framework to bridge the gap between various levels of appearance of the educational system (cf. CALLEWAERT and NILSSON, 1974; KALLÓS, 1975b). According to BOURDIEU and PASSERON (1970) the "hidden" function of schooling may be described as "symbolic violence". The concept "symbolic" is rather similar in meaning to what has been called the ideological level of the superstructure in classical marxism. It thus refers to a dimension of the social reality that is different from other dimensions. It has to do with "values", "meanings", "views", etc. By the process of symbolic violence particular "values", "meanings", etc. are forced upon the recipients as legitimate and are accepted as such. This in turn implies that certain groups can force their "values" etc. upon other groups, due to power relations at other levels than the symbolical one. The strength and power at the economical and political level is, of course, the foundation of the power relation at the symbolical level.

Applied to the school system this would mean that BOURDIEU and PASSERON describe the ideological effects of the manifest appearance of that system as symbolical communication where neither the symbolical violence nor its non-symbolical foundations are overtly expressed (cf. also BERNSTEIN, 1975). CALLEWAERT and NILSSON (1974) have pointed out that the analysis by BOURDIEU and PASSERON (1970) allows us to refute the common mis-understanding that it is the formal educational system that bears the responsibility for the origin, the shaping, and the upholding of existing ideas and values in society as such. On the contrary it is the task of the schools to cultivate and diffuse these ideas and values (cf. also BOURDIEU,1972; CHAMBOREDON and PREVOT, 1975).

The attempts to analyze the functions of educational systems that have been mentioned here may be considered as necessary steps to-

wards an increased understanding of such systems. At the same time these attempts represent important criticisms of earlier writings in pedagogics, and they also provide us with some tools to de-mystify and disclose the true character of the phenomena within our chosen field of study[5].

Much theoretical and empirical work is, however, needed in order to elaborate and develop these views further. From the perspectives developed in this paper it is for instance important to test the ideas that might provide us with links between the different levels of appearance of the pedagogical system. The concept of frame linked to an analysis of the functions of pedagogical systems may be one of the key concepts here. Developments are certainly needed if practical results at the level of actual teaching are desired[6].

It is at least partly true that marxist appraoches hitherto have concentrated on critique and of discussions at the macro level in political-aconomical terms. Or as BECK (1974) states about this approach:

> *"Sie hat der herrschenden Bildungspolitik und Pädagogik mehr aufs Maul geschaut als auf die Finger."* (BECK, 1974, p. 9)

The situation might be described in other terms, too. It might be stated that there are two important problem areas for pedagogical research within the capitalist societies today. One area concerns the relations between the structure of society and its pedagogical systems. This area concerns e.g. problems of reforms of school systems, the effects of such reforms etc. It is in this area that the approaches mentioned in this section have been particularly successful, also in their refutal of traditional research. The second problem area concerns the study of classroom practices - actual teaching. Traditionally the problem appears as a "technological" one. The aim is to "improve" classroom teaching. The questions are e.g. those mentioned in the "Introduction" to this paper. Within the perspective developed in this paper the problem is one of decription and explanation of actual practises and of the possible strategies for change (cf. p. 8).

In the remainder of this paper two issues will be dealt with as concrete illustrations of the perspective and framework outlined. These two issues may be regarded as "classic" within research on pedagogical processes. They are chosen for that reason.

METHODS OF OBSERVATION - A PERSISTENT DILEMMA.

> *"... man rationalisiert die Wissenschaft im Detail (Methoden) aber ist wehrlos gegen die historische Irrationalität der Zwecke und Bestimmungen denen sie sich unterwirft."* (MARZAHN, 1971, p. 32)

The literature on how to observe pedagogical processes is huge, and a wast number of instruments (or approaches) has been developed. At least six different approaches may be mentioned:

1. The socio-psychological approach. This approach has its roots in sociological work on interaction in small groups (cf. BALES, 1950; AMIDON and HOUGH, 1967). Teaching is consequently regarded as a socio-psychological encounter where the teacher is the key person. The ten-category system developed by FLANDERS (1970) as well as the modification of that system, presented by AMIDON and HUNTER (1967) have been widely used, e.g. in teacher effectiveness research.

2. Systems based on an analysis of teaching. In this group we find observational systems that have been developed on the basis of analyses of what teaching is. They are thus linked to a more or less elaborated attempt to establish some model or theory of teaching not borrowed primarily from the neighbouring sciences (psychology, sociology). The system developed by SMITH (SMITH, 1962; SMITH and MEUX, 1970) and that presented by BELLACK (BELLACK et al, 1966) are the most prominent examples. These systems require a recording of the verbal utterances and the transcript is analyzed according to the categories. The analysis focusses on cognitive aspects of the pedagogical process. The socio-psychological approach, on the other hand, is centered mainly on affective aspects.

3. Anthropological approaches. The most prominent example in this group is perhaps the analysis presented by SMITH and GEOFFREY (1968) who themselves label their study as micro-etnographic (cf. also SMITH and POHLAND, 1974). The approach is essentially qualitative, and comes rather close to procedures employed by some socio-linguistically oriented approaches (cf. e.g. some of the chapters in part III of the volume edited by CAZDEN et al, 1972).

4. Linguistic approaches. The talk that is going on in classrooms is, of course, a good example of discourse in a rather well defined setting. Within a linguistic frame of reference attempts have been made to analyze and discuss this kind

of discourse (e.g. SINCLAIR and COULTHARD, 1975). Interestingly enough this approach comes in many instances in practice rather close to the categories developed by BELLACK et al (1966) at the level called "moves" in that system.

5. The experimental analysis of behavior approach. This approach is often left out in discussions about the study of teaching. The focus is both on an analysis of the ongoing process and on how overt behaviors may be changed in frequency or re-shaped through experimental manipulation of reinforcement contingencies. This approach is oriented towards change in existing patterns of behavior and not primarily towards description of "normal" states except as a basis for sub-sequent manipulation (cf. e.g. BIJOU, 1970; BIJOU et al, 1969).

6. The fishing trip approach. An analysis of research in education in Sweden was made by ALKIN and JOHNSON (1971). As to problems of design and data collection they stated:

> *"Sure, hypotheses should often be modified on the basis of insights from data. Certainly, theorems will be revised drastically as a consequence of the data collection and analysis. But, massive correlational fishing-trips are no substitute for the kind of thinking, conceptualization, and hypotheses generation that necessarily must precede data collection and analysis."* (ALKIN and JOHNSON, 1971, p. 21)

WALTON would probably not have liked the analogy. The complete angler should know what he is after, why he is doing what he is doing, and how he should go about doing it. Still, examples can be easily found where researchers try more or less to measure (or categorize) every conceivable aspect of the process with the aim to obtain "clusters of characteristics" through e.g. factor analysis or to find at least some positive correlations with e.g. outcome data.

The approaches mentioned here serve primarily as examples of the diverse interests of researchers studying pedagogical processes. The intention is not to cover all aproaches, but rather to establish the point that different approaches grew out of different conceptualizations of teaching and out of different interests. The use of a certain approach provides the researcher with data not easily compatible with those generated by the use of instruments (or category systems) developed within other traditions. Furthermore, each instrument has its own special strengths which makes it more suitable for certain kinds of analyses than for others. This holds true even for the so called

multi-dimensional systems, like e.g. the OSCAR-system (MEDLEY and MITZEL, 1963) and the Topic-Classification-System (GALLAGHER, 1970). Some attempts have been made to combine different approaches. LUNDGREN (1972) thus tape-recorded several lessons. Interaction data were analyzed according to the category systems developed by BALES (1950), AMIDON and HUNTER (1967), and BELLACK et al (1966). As an important addition, data were coded at the level of the individual student. Teacher interaction with a single student when the rest of the class worked by themselves (individualization) was coded in a separate category. Interestingly enough it is possible to state that among the data that LUNDGREN (1972) presents those generated by the sophisticated coding of the lessons are the least interesting ones. Instead, interviews with teachers and control of what was actually taught provided the most promising results. Interaction data demonstrated some interesting patterns in relation to different groups of pupils within the class and in relation to class composition, but it seems somewhat doubtful if data are interpretable in terms of the category systems used. The coding in terms of three different systems yielded rather low increase in the amount of information in relation to the costs of such a procedure.

It is possible that the question of what category system to use is a pseudo-question, originating in the narrow view of science and research in education discussed earlier. The real problem for research lies in the formulation of "good" questions.

This does, however, not necessarily imply that it is impossible to present at least some conclusions concerning the methods of observation of pedagogical processes.

From a perspective which in important respects is similar to that advanced in this paper, LUNDGREN (1972, pp. 49-79) discussed observation studies of teaching. He tried to answer the questions "What is observed?", "How is it observed?", and "Why is it observed in this way?". His answer to the question "What?" is rather similar to that proposed above. The choice of a category system drastically limits the kind of problems that can be studied. As is at least partly evident from the description of various approaches above, the systems were developed on the basis of certain ideas about the pedagogical processes, and also in order to answer certain questions concerning them[7]. But the choice of a certain category system need not be the first

one. Certain methodological answers to the question "How?" may first be given. One issue here is to observe the process by technical aids such as audio- or video-tapes. It is easy to agree with LUNDGREN (1972) when he states:

> *"This method has clear advantages since the interaction can be stored un-coded and be used in making various classifications. The reliability and stability of the classifications tend to become higher with this method. There are other advantages, such as the possibility of classifying the same material in different ways. The negative side is the cost. It takes about ten hours to make a typescript of an ordinary 40-minutes classroom lesson that has been recorded on audio-tape..."* (LUNDGREN, 1972, p. 59)

Certain of the category systems mentioned above require the use of technical aids, as it is impossible for an observer to classify the ongoing events in situ. This is true for e.g. approaches of types 2,3 and 4, while on the other hand, e.g. the system developed by FLANDERS (1970) can be used "on the spot". In most instances it seems sufficient to use transcripts based on tape-recorded lessons, and thus not the even more costly method of video-tape. LUNDGREN (1972) as well as e.g. CALLEWAERT and NILSSON (1975a; 1975b; 1975c) used observers as a complement. The observers took notes about e.g. non-verbal aspects of the ongoing process and furthermore successively the names of those participating verbally. Data could thus be analyzed also at the level of the individual student. This procedure of recording the pedagogical process gives room for a great flexibility in subsequent analyses. But in order to explain the observed process, it is obviously not enough to have access to such data. Knowledge of the frames imposed and data provided via interviews with teachers and students are in most instances necessary if explanations and not merely descriptions are intended.

A note of caution should perhaps be entered at this point. It is relatively easy to amass a lot of data. In a summary of observational research ROSENSHINE and FURST (1973) note:

> *"It is easier to develop an instrument than to analyze all the data that an instrument can generate."* (ROSENSHINE and FURST, 1973, p. 170)

The vagueness of many theoretical attempts in the area of pedagogics as well as the ambition of the researcher to capture as many aspects about the process and its determinants as possible might prove itself wasteful, as only limited portions of information will probably be used in the final analysis. The data might even overwhelm the researcher to the point where he runs

the risk of loosing sight of the problems which were the basis for his data gathering.

It has already been stated that it seems to be en vogue to conduct process analytical research. The mere inclusion of data about the process does not make an irrelevant study relevant. The choice among several existing category systems becomes meaningless if the aims of the study and its assumptions are not valid in relation to the phenomena under study. In their summary of traditional observational research ROSENSHINE and FURST (1973) reach a sad conclusion:

> *"It is possible that the patterns of effective teaching for different ends are so idiosyncratic that they will never be isolated; it is possible that studying teaching in natural settings is unproductive because the settings are not functional for the desired outcomes; it is possible that descriptive systems and research within the descriptive-correlational-experimental loop will be unproductive; it is also possible that linear and nonlinear curriculum approaches and the monitoring of these approaches will be unproductive. At the moment there has not been enough research to make any firm statement about any of these concerns."* (ROSENSHINE and FURST, 1973, p. 175)

From the foregoing sections it should be evident that several of the possibilities mentioned by ROSENSHINE and FURST (1973) may be considered as more than just possibilities. It is quite clear that the "narrow view of science" in combination with a narrow view of what teaching is about, has steered not only the questions asked, but also the methods used to study these questions and the ways of analyzing the data.

However, some of the approaches to the study of teaching seem more fruitful than others from the point of view developed in the earlier sections of this paper. Work by B.O. SMITH, BELLACK and L.M. SMITH mentioned earlier (p. 16) as well as the thought-provoking analysis by JACKSON (1968) represent good starting-points for further work[8]. The merits of these approaches are not confined to the methods of observation and categorization used. Instead, it is the combination of theory and observation that has generated data and analyses that give us meaningful insights into the process of teaching.

The frame of reference outlined in this paper furthermore indicates a necessary break with the traditional questions asked by classroom process researchers. Research on teacher effectiveness in terms of relations between process variables and outcomes in terms of student learning seems as narrow and meaning-

less as traditional psychometric prediction studies where teacher traits (and/or student traits) were correlated with outcome measures.

In spite of the rapid development in the area of classroom research since the publication of the paper by MEDLEY and MITZEL (1963) mentioned in the introduction to this paper, it is still not possible to hand down precise and firm advice concerning the choice of strategies even within the scientistic paradigm. If the perspective chosen in this paper is used, the issue of formulation of relevant questions comes into the foreground, and the concrete remarks concerning methodology become somewhat general on the prescriptive side. On the other hand a chosen perspective does not only function as a basis for choice. An important function or aspect of the framework developed here is that its use allows the researcher to discard a number of approaches and pseudo-problems.

THE PEDAGOGICAL PROCESS AND ITS CONTENTS.

Teaching is in many instances simply conceived as more or less systematic (and more or less successful) attempts to promote learning within individuals. Teaching as a pedagogical process is accordingly regarded as a series of interactions between teacher and taught with that objective in mind. The following definitions of process and product are typical:

> *"By process we mean how teachers and students behave in the class. By product we mean the attitudes, behavior etc. that students learn over time, as a result of participating in the classroom process."* (GOOD, BIDDLE and BROPHY, 1975, p. 33)

That the primary concern of teaching is the promotion of learning is, indeed, the basic assumption of most of the research on teacher effectiveness and also of research on teaching methods. It is then at least implicitly understood that the effective teacher is the one who can demonstrate "good" products in terms of results on various tests given to students. The upper limit for the achievement of students is defined in terms of student abilities (or traits) and in terms of resources allocated to schools and teachers (e.g. time and money). It is within this framework that the teacher can operate.

This view of teaching is problematic in several ways. It is quite clear that the subjects taught in school are not chosen

at random and that measured student achievement is more or less directly related to officially stated objectives of the kind that "schooling should produce learning in various areas".

But the selection of contents within a subject, the relations between units within subjects, the ways through which content is presented (methods), the language used by teachers and textbooks etc. do not merely serve the purpose of promoting learning in individuals directly related to traditional tests used in evaluating them. Teaching is also means towards yet other ends. BOURDIEU and PASSERON (1970) regards it as symbolical violence, whereby a ruling class imposes norms, ideas, and values, i.e. teaching as a means in cultural and social reproduction. Teaching is thus conceived as a process whereby schools fulfil their different functions (cf. pp. 13-15) but these functions are disguised and instead apparently neutral statements like "the promotion of learning" are presented as "goals".

One of the reasons for the unproblematic view of teaching mentioned above is accordingly embedded in an insufficient analysis of the functions of teaching as a part of the educational system as such. Another reason is perhaps epistemological. A certain view of knowledge and how knowledge is transmitted and attained fits more closely to the objective functions of schooling and teaching than do other views. The present (and traditional) strategies of research on the process - which have been criticized throughout - accordingly have an important ideological function in upholding the myths about teaching and schooling.

A paper on the "Classification and Framing of Educational Knowledge" by Bernstein (1971) might be used as a startingpoint for developing the ideas of this paper further. The opening statement of that paper reads as follows:

> *"How a society selects, classifies, distributes, transmits and evaluates the educational knowledge it considers to be public, reflects both the distribution of power and the principles of social control."* (BERNSTEIN, 1971, p. 47)

He furthermore states that

> *"Formal educational knowledge can be considered to be realized through three message systems: curriculum, pedagogy and evaluation. Curriculum defines what counts as valid knowledge, pedagogy defines what counts as a valid transmission of knowledge, and evaluation defines what counts as a valid realization of this knowledge on part of the taught."* (BERNSTEIN, 1971, p. 47)

Two concepts are introduced by BERNSTEIN (1971) to deal with the issue of how educational knowledge is organized and controlled. The first concept is that of "classification" which refers to

> *"... the degree of boundary maintenance between contents."* (BERNSTEIN, 1971, p. 49)

The second concept is that of "frame" which refers to

> *"... the degree of control teacher and pupil possess over the selection, organization and pacing of the knowledge transmitted and received in the pedagogical relationship."* (BERNSTEIN, 1971, p. 50)

The concept of classification is thus related to the message system of curriculum, while the concept of frame is directly related to pedagogy[9].

BERNSTEIN (1971) uses these concepts in order to develop a typology of "educational knowledge codes" at the levels of curriculum and pedagogy. To "pure" types of such codes may be distinguished. One is called a "collection type curriculum" which is characterized by strong boundary maintenance between contents, i.e. by strong classification. The other type is the "integrated code" which is characterized by weak boundary maintenance between contents, i.e. by weak classification. The collection type is at the level of pedagogy in many cases characterized also by strong framing, while the opposite is the case where an integrated code is in existence. Two general types of collection codes are mentioned - the specialized and the non-specialized type:

> *"The extent of specialization can be measured in terms of the number of closed contents publicly examined at the end of the secondary educational stage."* (BERNSTEIN, 1971, p. 51)

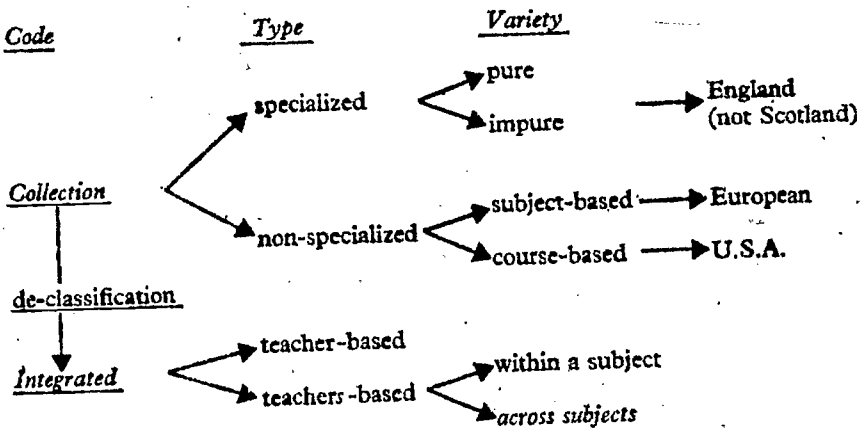
The integrated code is perhaps somewhat more difficult to understand,

> *"Because one subject uses the theories of another subject, this type of intellectual interrelationship does not constitute integration. Such intellectual interrelation may well be part of a collection code at some point in the history of the development of knowledge. Integration as it is used here, refers minimally to the subordination of previously insulated subjects or courses to some relational idea which blurs the boundaries between the subjects. We can distinguish two types. The first type is teacher based. Here the teacher in the infant school has an extended block of time with often the same group of children. The teacher may operate with a collection code and keep the various subjects distinct and insulated, or he can blurr the boundaries between the subjects. This type of code is easier to introduce than the second type, which is*

teachers based. Here integration involves relationships with other teachers." (BERNSTEIN, 1971, p. 53)

The different codes, the sub-types and their varieties are summarized in figure 1.

FIGURE 1: Different codes, subtypes and varieties. From BERNSTEIN (1971, p. 55).



If Sweden is used as an example, it is quite clear that a collective code is predominant at the upper level of the comprehensive school (grades 7-9). Classification is strong with a clear-cut subject division. Teachers are identified by subjects, and the evaluation (or assessment) system also contributes in emphasizing the collection code. Framing - using BERNSTEIN's (1971) terminology - is somewhat difficult to assess. At least on paper teachers possess certain freedom as to the selection, organization, and pacing of knowledge within the subject matter boundaries, but in reality framing tends to be strong. This is again partly due to the evaluation system, partly to the influence exerted by textbooks used on planning and actual teaching[10]. At lower levels of the Swedish comprehensive school system there exists a possibility for developing a teacher based integrated code within and across subjects, perhaps primarily due to the fact that a single teacher teaches the class across subjects and for a considerable time period. A within subject integration (cf. figure 1) is perhaps more probable than an across subject integration, again due to the steering influence by textbooks and by a subject-divided syllabus. Again framing is weak at least on paper and in the early grades at least the teacher has a consi-

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derable freedom of pacing. Influence by e.g. colleagues, and standardized achievement tests may well reduce the options that actually are used. The collective code dominates at the secondary level, although certain changes in the curriculum paves the way for a slight de-classification. The development of the pre-school system in Sweden during the last few years may be mentioned as an example of an integrated code coupled to an invisible curriculum (cf. BERNSTEIN, 1975).

The development at the university level is different. The reforms of the late sixties increased the strength of the collective code in operation by a modularization of the subjects and by an attempt to establish well defined lines of study composed by subjects which should be studied in a defined order. There was thus not only the traditional and rather sharp division between subjects, but a within-subject collection code began to be established on the basis of courses to be taken in a defined order and examined separately. Recent attempts to establish cross-disciplinary courses at the undergraduate level may be interpreted as a trend towards an integrated code. A renewed interest in project-oriented studies and group-oriented teaching is another example (cf. UKÄ-RAPPORT, 1975). This tendency is interesting as it involves both an attempted change in the organization of contents (classification) and a change at the level of teaching methods towards weak framing. At the same time the curriculum is clearly becoming more invisible (cf. BERNSTEIN, 1975). Emphasis is put on "personal development" and on the acquisition of social skills (to be able to cooperate with others etc.). It is quite possible to regard this trend as a consequence of changes in work conditions in the society (cf. BECK, 1974, pp. 53-61; LEVIN, 1974).

The analysis of codes leads BERNSTEIN (1971) to pose three interrelated questions concerning educational knowledge codes:

> *"1. What are the antecedents of variations in the strength of classification and frames?*
> *2. How does a given classification and framing structure perpetuate itself? What are the conditions of and resistance to, change?*
> *3. What are the different socializing experiences realized through variations in the strength of classification and frames?"* (BERNSTEIN, 1971, p. 54)

Using the perspective outlined on pages 9-15 it should be obvious that part of the answer to these questions can be sought through an analysis of the objective functions of the educatio-

nal system as it is expressed at various levels of appearance. Another part of the answer - and especially to the second question posed by BERNSTEIN - can be given by taking into account the objective power and control mechanisms in operation. This is discussed by BERNSTEIN. This question is, of course, directly related to the generalized concept of frame used in the previous section of this paper (cf. pp. 9-12).

In order to connect the discussion so far in this section to the issues mentioned earlier some comments on the literature on pedagogical process analysis must be made.

The whole issue of contents or subject matter has been treated in a rather mysterious way in that literature. On the one hand contents has been used as a dependent variable and in those instances defined via the achievement tests used. On the other hand it has been used as a contextual referent in order to identify a particular study (e.g. a note that the study used teachers and students in a course in educational psychology at undergradutate university level). In the first case it should be noted that the content validity of the achievement tests was checked in rare instances only using the actual contents of the teaching process as the criterion (cf. DAHLLÖF, 1971). Many of the observational techniques discussed in the previous section do not even attempt to capture the cognitive contents of instruction, even if the aim is a description of interactive behavior related to student outcomes as those are described and defined cognitively[11].

If content is discussed in the literature on pedagogical processes this is in most instances done at a general level. This in its turn implies that the idiosyncratic aspects of subject matter are left out. In many instances authors even fail to note the existence of this problem in their search for generalizable and stable findings across grade levels, subjects (contents) etc. (cf BROPHY and GOOD, 1974; DUNKIN and BIDDLE, 1974; GOOD et al, 1974). This is particularly interesting since this procedure leaves out the tremendous didactic literature focussing on the teaching of particular subjects such as English, Social Sciences, etc. where, indeed, the idiosyncratic aspect is cultivated, even to the point of the absurd.

Still, the common definitions of pedagogical processes (cf. p. 21) emphasize the intentions of such processes in terms of learning. At the level of the curriculum this is expressed by

the so called Tyler-Rationale where the specification of desired outcomes in terms of expected learning is supposed to be a first step in curriculum development and in the planning of teaching[12].

The third question posed by BERNSTEIN implies that the issue of contents is not solely confined to outcomes in terms of achievement in the cognitive area. In fact, the contents of teaching in terms of subject matter may for a number of students be of secondary importance. Subject matter and its presentation (pedagogy) and its evaluation may for those students better be described in terms of its socializing effects. Again, this re-emphasizes the point made earlier about the different objectives of teaching.

In order to clarify this aspect it is necessary to make some epistemological notions, which also refer to the second question raised by BERNSTEIN.

ESLAND (1971) discussed the influence of a "psychometric" model of teaching of "subject material"[13]:

> *"The psychometric model endows the child with an 'intelligence', a capacity of given power within which his thinking develops. He is a novitiate in a world of pre-existing, theoretical forms into which he is initiated and which he is expected to reconstitute. The teacher monitors his progress by means of 'objective' evaluation and he is differentiated from others by its 'objective' criteria. According to the parameters of this model, the teacher is society's surrogate selector; his certified competence to perform this function is not in question. Any criticism which attaches to him as a 'poor' teacher is likely to refer to his enactive technique, his charisma, or his ability to maintain 'order'; it is not likely to attack the basic epistemology on which his pedagogy rests.*
> *This view regards the child - by definition - as a deficit system; a passive object to be progressively initiated into the public thought forms which exist outside him as massive coercive facticities, albeit 'worthwhile' ones. It also legitimates a didactic pedagogy - the 'good' pupil is docile and deferential, cognitively, at least - and it provides particular organizing principles for the selection and transmission of knowledge.*
> *It is possible to regard this epistemology as a reification of both the child and public knowledge; for teachers and pupils, the pedagogy which is founded on it as an agency of alienation, and the knowledge content is an important part of false consciousness..."* (ESLAND, 1971, p. 89)

This type of critique becomes more and more common. It is, however, important to recognize that the basic epistemology and the pedagogy it legitimates exists not primarily as a result of "false thinking", or as a product of "mistakes". To trace the

antecedents of this epistemology and its influence on pedagogical research on the one hand, and on the "classification and framing" of educational knowledge on the other hand is an important task for historians in our discipline (cf. HAMILTON, 1974; SIMON, 1975). The narrow view of knowledge outlined above and its consequences for the establishment and for evaluation of a certain curriculum type are important constraints limiting the number of options for students and teachers in the pedagogical relationship.

But the discussions about the "psychometric model", as ESLAND (1971) calls it, has in many instances avoided the real issues. In some instances this has meant a focus on the pedagogic relationship between teacher and taught. This in its turn means that the issue of why a certain way of teaching is in existence (the first question posed by BERNSTEIN) is neglected and that the contents and objective functions of teaching are disregarded (cf. pp. 9ff). Functions and content become defined in terms of methods[14]. The discussions are furthermore in most instances firmly anchored within an idealistic frame of reference. If only teachers knew they would change, and it is, of course, possible for them to change[15]. Thus, the limits for change are not recognized, nor the objective functions of what is presently going on.

Strong classification and strong framing (BERNSTEIN's terms) have met the requirements for social and cultural reproduction within the capitalist state.

The present trend towards integrated codes does not necessarily mean a change in the true sense of the word. One of the issues at stake here is expressed by BERNSTEIN in the third of his questions (see p. 25). If it is true - and the evidence seem to point in that direction - that upper and middle class interests still dominate within the integrated code and within a weakly framed pedagogical relationship (BERNSTEIN's terms) then the change is primarily at the level of appearance[16]. What was visible and therefore easier to criticize and to rebel against, now becomes more subtle and hidden behind an obscure ideological language. An external control is substituted by methods emphasizing internal self-control.

35 It is an important question for empirical pedagogical process oriented research to identify, describe, and explain the socialization process within this system. Such studies should pro-

bably focus on the relations between the selected contents and its pedagogic representation in the teaching situation on the one hand, and the functions of the school on the other. This problem can accordingly be dealt with within the framework outlined in this paper. It is particularly important to study the class based nature of such influences.

In an important footnote BERNSTEIN (1971) states:

> *"What is often overlooked is that the pacing of the knowledge (i.e. the rate of expected learning) is implicitly based upon the middle-class socialization of the child. Middle-class family socialization of the child is a hidden subsidy, in the sense that it provides both a physical and psychological environment which immensely facilitates, in diverse ways, school learning. The middle-class child is oriented to learning almost anything. Because of this hidden subsidy, there has been little incentive to change curriculum and pedagogy; for the middle-class child is geared to learn; he may not like, or indeed approve of, what he learns, but he learns. Where the school system is not subsidized by the home, the pupil often fails. In this way even the pacing of educational knowledge is class based. It may well be that frame strength, as this refers to pacing, is a critical variable in the study of educability. It is possible that the weak frame strength (as this refers to pacing) of integrated codes presuppose a longer educational life. Middle-class children may have been potential pupils for progressive schools because of their longer educational life."* (BERNSTEIN, 1971, pp. 57-58)

This statement may be used in raising another point about contents in relation both to the functions of the school and to the character of the pedagogical relationship at the micro level. The Sedish school system will again be used as an example.

The establishment of a comprehensive school system created a number of problems for the teachers. One of these problems was that classes became more heterogenous as streaming and differentiation within the school system vanished in their organizational aspects. This was expressed in terms of the need for individualized teaching within the class, as opposed to various forms of ability grouping. DAHLLÖF (1967, 1971) demonstrated that the organizational reform had influences on teaching tempo as measured in terms of pacing. He hypothesized that the teachers used a certain group of students as a criterion group in decisions when to move from one content unit to the next. This criterion - or steering - group was supposed to be composed by students within the 10th to the 25th percentile in regard to ability. This hypothesis was later corroborated by LUNDGREN (1972) in an empirical study of teaching and frame factors.

The steering group may be regarded as a "product" of the particular pedagogical frame factors within the Sedish school system at that time (cf. also LUNDGREN, 1974). A change in these frames may alter the position of the steering group with regard to ability (cf. BJÖRKLUND, KALLÓS and LARSSON, 1974) or it may perhaps not even be present. The use of a steering- or criterion group by the teacher may thus be regarded as one solution in the area of pedagogy in the constrained and directed situation.

One interesting point here is that this type of evidence seems to contradict the statement about pacing and content quoted from BERNSTEIN above. The teachers in LUNDGREN's study used a rather slow pacing, which in relation to actual contents and the evaluation system used in Swedish schools would have to be considered as "beneficial", for e.g. those students not "subsidized" by the home. An alternative explanation is, however, possible, which also demonstrates the complexities involved in studying pedagogical processes in relation to the contents of teaching.

What does it really mean that teachers "wait" until a certain group of students "understands" or "masters" a certain content unit? On the surface it is possible to observe that the teacher directs e.g. more questions and more "soliciting moves" (BELLACK et al, 1966) towards the steering group. But does this necessarily imply that he waits until the students really know? This is obviously a question that cannot be answered if observations of the pedagogical process do not go beyond registration of content in terms other than e.g. subject-relevant vs. subject-irrelevant. In an ongoing project KILBORN and LUNDGREN (1973) aim at studying what the teacher really is doing and saying when he e.g. solicits, responds, reacts, etc. in relation to contents. This means that the language used by the teacher, the contents of his teaching and the evaluation must be directly put in relation to the language of the student and his prior knowledge. KILBORN and LUNDGREN have devised a series of diagnostic tests in arithmetic at a certain grade level where each new problem area is defined in terms of what prior knowledge is required in order to solve the new problem. These tests build upon a careful analysis of the textbooks used, the evaluation requirements in the school, and on an idiosyncratic subject matter analysis. Hitherto unpublished results tend to in-

dicate what really happens when the teacher aids a student, and when he paces his teaching. He directs attention to those students who have problems but a great many of his questions and structuring moves tend to be almost self-fulfiling. The teacher "wants" a correct answer and monitors the student towards producing it in such a way as to make it virtually impossible for him to miss the desired point. The questions already contain the answers. Thus, solutions to the problems or to questions asked are in many instances nothing but a play with words. The student merely repeats or states what the teacher wants him and cues him to say. This ritual obviously satisfies the teacher, who is seemingly unaware of its character, but is unrelated to actual understanding on part of the student (cf. JOHANSSON, 1975). The question is if the teacher is able to devise a strategy that would produce an understanding on part of every student within the space as it is constrained by the frames in operation or if pseudo-solutions are the only alternatives left? CALLEWAERT and NILSSON (1975a; 1975b; 1975c) provide other concrete data and examples of the ritualistic behavior mentioned above.

The tentative interpretation offered here implies that pacing in relation to the student must be analyzed in a more complex design than is common, and that various settings may produce solutions on part of the teacher, which at the surface may seem to satisfy expressed criteria (in this case that of individualizing teaching). The interpretation does not imply, however, that the student does not learn anything. But what he learns is perhaps something quite different from that expected. In the concrete example the student diagnosed as "less able" learns a preselected view of arithmetics, a certain way of attacking problems, and how to react to cues from the teacher in order to reproduce certain desired answers. This situation may again be interpreted in terms of "symbolic violence" (cf. p. 14) suggesting a primarily socializing function of teaching that uses a certain way of presenting contents as a "method".

What is re-emphasized is accordingly that the contents of teaching cannot be discussed solely in relation to outcomes in terms of achievement. Selection of contents and its presentation in the form of a teaching process is also a means towards ideological ends where schools present themselves as neutral transmitters of accepted knowledge.

CONCLUDING REMARKS.

The study of pedagogical processes may be considered as an important part of pedagogical research as such. In fact many of the issues currently discussed in relation to process oriented research also have relevance for other areas of inquiry within the discipline of pedagogics.

During the sixties the number of studies directly concerned with problems of teaching increased. New methods of data collection were developed and more information about various aspects of teacher-student interactions was gathered. At the level of theory, however, few advances were made, as has been noted by several reviewers.

The basic aim of process oriented research should be to describe existing practices and to work out theories which enable us to explain the causal relationships that give birth to these practices. At the macro level the immediate causes are - as we have tried to point out - linked to the political and economical structure of the society in question.

The majority of studies aiming at description and explanation of current practices have failed to explore the links between actual processes and their determinants in such a context. Instead an idealistic (as opposed to a materialistic) frame of reference is adhered to.

The concept of frame was introduced and discussed in relation to teaching processes on the one hand and to the structure of the educational system on the other. The conceptual framework was related to the one developed by BERNSTEIN (1971; 1975) in a discussion using the contents of teaching as an example. The theoretical perspective developed in this paper implicitly and explicitly points to several areas of research. It should be emphasized that research geared at further empirical elaboration of the perspective outlined is needed.

The issue of contents was discussed here not in terms of intentions like "teaching to", "teaching for", etc. (cf. SCHEFFLER, 1960). Nor was it discussed purely in terms of expected student achievement in e.g. cognitive, affective and psycho-motor domains. The whole issue of contents was instead treated as an example of an expression of the contradictory nature of the functions of educational systems as they are manifested at the level of actual teaching.

The previous discussion of contents and the teaching process could also be related to current efforts in the area of curriculum theory and research[17]. E.g. REID (1975) has noted an apparent gulf between theories of curriculum construction (or planning) on the one hand and theories of curriculum implementation on the other. In his view a successful theory of curriculum must cover both aspects. Such a theory would then directly relate "planned" and "intended" teaching to the actual process that is carried out. The perspective outlined in this paper uses the concept of frame to bridge the gap between actual teaching and its determinants. At the level of teaching this means that we have to discuss what is actually possible to do within the space circumscribed and constrained by the frames imposed. REID notes that:

> *"An interesting fact about curricula, and one often overlooked by theories, is that they are there anyway. Even without the intervention of theorists, planners, designers and evaluators students go to school an to college and what they experience there is a curriculum."* (REID, 1975, p. 247)

From our point of view we might paraphrase REID by stating that "what is there" is not there "anyway", but because it is possible and because it is reasonable. What is there thus represents a possible and in most instances a reasonable solution at the level of teaching by teachers within the space defined by the frames imposed. As noted this space is not only constrained in terms of contents but also in terms of the pedagogical relationship between teachers and students due to decisions concerning time, class size, textbooks, etc. (cf. pp. 9-12).

When curriculum theorists discuss the contents of teaching or when researchers try to study relations between curriculum and teaching another problem becomes obvious, too. At the macro level the functions of schooling and its relations to the political and economical structure of the society are discussed. Schooling is at this level regarded as a series of activities going on for a long time and the concrete activities are discussed in broad and general terms. Schooling is primarily at this level not discussed in terms of individual pupils but in relation to the population of pupils and how this population is differentiated etc. At the level of the teaching process, however, researchers seem to have focussed on small segments of time. The time unit is the course or the single lesson. These time units are further divided into smaller segments and the result is a detailed picture of all the activities that ta-

ke place. These common research procedures may yield important results as has been discussed in the foregoing sections of this paper. But it is very difficult to relate the resulting descriptions to the analyses of schooling performed at the macro level. At the most one could perhaps hope that process oriented research could demonstrate some stable patterns of classroom activities which could provide a basis for discussions of long term effects. But the variables chosen in traditional research on teaching are selected from other perspectives, and it is by no means certain that the stable patterns actually demonstrated (e.g. HOETKER and AHLBRAND, 1968) can be meaningfully related to reasoning at the macro level. What we are looking for is not only answers to why certain practices go on in classrooms but also a description of such activities in terms that emphasize effects of prolonged exposure.

The fact that process oriented research will encounter such difficulties implies the need for developing a conceptual apparatus to cope with educational phenomena at various levels of appearance. This problem was also recognized in the previous sections. It could be noted that the teacher and the students will experience these problems too. The present division of work and the conditions under which teachers carry out their tasks prevent them from gaining a full insight into the actual functions of their work. It will appear to them primarily as work focussing on the single student in a short time perspective. This emphasizes the need for empirical research on the operation of the mechanisms mentioned earlier. How does frames actually influence planning and subsequent actions of students and teachers? Which are the concrete manifestations at the level of teaching of a certain system of proximal frames? How is a present pattern of teaching upheld, or how is the apparent stability maintained? The empirical research needed thus aims at a refinement of theory and at an elaboration of the perspective outlined here.

Such research would also be a necessary pre-requisite for strategic action that aims at change within the limits set (cf. ROLFF, 1974).

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NOTES.

1. For a somewhat changed view on the issue of the "Two Disciplines of Scientific Psychology" see CRONBACH (1975).

2. Critique of existing pedagogical practice has always been common. Such a critique is in many instances based on a rather accurate description of what is going on in the classrooms. The recent wave of liberal criticism (e.g. POSTMAN and WEINGARTNER, 1971) thus regards schools as "bad" and in desperate need of "change". But, since the reasons for the existing patterns are not understood, nor the necessary pre-requisites for change the solutions offered by the liberal critics are completely unrealistic (cf. CALLEWAERT and KALLÓS, 1976). FEINBERG and ROSEMONT (1975) pointed to one obvious and important fallacy in the reasoning of many liberal critics by stating:
"Granting the many strengths of the new criticism, its outstanding weakness has been the rather simplistic assumption that the source of the problem could be located in some quirk on the part of individuals. When it was found that the teachers in a particular school were racist or that others were generally resentful of any expression of individuality, the implication was that the problem had been explained. Unfortunately the new critics did not make a sharp distinction between the standards by which the competency of a teacher ought to be judged and the reasons why such standards are generally not operational - why teachers can get away without meeting them. If a teacher continously discourages the expression of individuality or real creativity, or if he consistently treats black youngsters as inferior to whites, then there is good reason to question his general competence. If, in addition, he does these things and gets away with them, then there is good reason to believe that the source of the problem lies in other areas.
The new critics were thus generally optimistic, believing that the problems could be handled by adjustments in personnel and/or curricula. If the problem was that children were breaking under too much direction, then make the classroom a great smörgåsbord where each child could learn as little or os much as he liked in whatever area he chose. If the problem was that black children were being brutalized by white racist teachers, integrate the schools and children of both races would profit. Yet here, too, the results of implementing new measures did not result in any significant improvements in public schooling..." (FEINBERG and ROSEMONT, 1975, p. 6)
To conclude the argument it may be noted that
"... most educational critics have assumed and/or argued that the schools have failed in carrying out their mission, and that therefore education was in need of radical change."
(FEINBERG and ROSEMONT, 1975, p. 12)
Instead, it may be argued that the contrary assumption is true, i.e.
"... that the schools have succeeded well in their task, and that therefore it is society that is in need of radical change." (FEINBERG and ROSEMONT, 1975, p. 12)

3. For the sake of brevity and clearness most of the references to work by other researchers that substantiate or further illuminates the points raised in the summary have been omitted. The reader interested in a more lengthy discussion of these issues is referred to the papers mentioned.

4. The sources mentioned could imply that such literature was limited to the Federal Republic of Germany. This is, of course, not the case. In recent years at least some scholars in the United States have also become interested in analyses of this kind and a number of papers and books written from a more or less explicit Marxist perspective have been published (e.g. CARNOY and LEVIN, in press; GINTIS and BOWLES, 1975; CARNOY, 1975).

5. The reader is also referred to a recent paper by ALTHUSSER (1973) on "Ideology and Idelogical State Apparatus" where ALTHUSSER particularly discusses the school as an ideological state apparatus as distinguished from the repressive state apparatus in the context of an attempted extention of marxist theory of the state. ALTHUSSER considers the school as a dominating ideological state apparatus:
"... kein ideologischer Staatsapparat verfügt soviele Jahre über die obligatorische Zuhörerschaft (und die immerhin kostenlos ist ...) der Gesamtheit der Kinder der kapitalistischen Gesellschaftsformationen - 5 bis 6 Tage pro Woche und 8 Stunden am Tag.
Durch das erlernen von einigen Fähigkeiten, die verpackt sind in eine massive Einprägung der Ideologie der herrschenden Klasse, werden jedoch zu einem Grossteil die Produktionsverhältnisse einer kapitalistischen Gesellschaftsformation reproduziert, d.h. die Verhältnisse von Ausgebeuteten zu Ausbeutern und Ausbeutern zu Ausgebeuteten. Die Mechanismen, die dieses für das kapitalistische Regime lebensnotwendige Ergebnis produzieren, sind natürlich bedeckt und verborgen durch eine Ideologie der Schule, die allgemein vorherrscht, denn sie stellt eine der grundlegenden Formen der herrschenden bürgerlichen Ideologie dar: eine Ideologie, die die Schule als ein neutrales Feld darstellt, das ohne Ideologie (weil ... weltlich) ist, wo Lehrer, die das „Gewissen" und die „Freiheit" der Kinder achten, die ihnen (vertrauensvoll) überlassen sind durch deren „Eltern" (welche ebenfalls frei sind, d.h. Besitzer ihrer Kinder), sie durch das eigene Beispiel, die Kentnisse, die Literatur und ihre „befreienden" Tugenden hinführen zur Freiheit, zur Moralität und zur Verantwortlichkeit von Erwachsenen.
...
Faktisch ist die Kirche heute in ihrer Funktion als dominierender Ideologischer Staatsapparat durch die Schule ersetzt worden. Diese ist gekoppelt mit der Familie, ebenso wie einst die Kirche mit der Familie gekoppelt war. Man kann daher sagen, dass die unvergleichbar tiefe Krise, die in der ganzen Welt das Schulsystem vieler Staaten erfasst hat, zumeist verbunden mit einer (bereits im Manifest angekündigten) Krise, die das Familiensystem erschüttert, einen politischen Sinn erhält, wenn man berücksichtigt, dass die Schule (und das Paar Schule-Familie) den dominierenden Ideologischen Staatsapparat darstellt: den Apparat, der eine determinierende Rolle bei der Reproduktion der Produktionsverhältnisse einer in ihrer Existenz durch den weltweiten Klassenkampf bedrohten Produktionsweise spielt." (ALTHUSSER, 1973, pp. 141-143)

6. This does not imply that I share the view that almost any change is possible within the classroom in capitalist society. On the contrary, the space of options for e.g. teachers is limited indeed, if a "radical" change is the aspiration.

7. This statement implies a critique against the notion about the relations between theory and observation characteristic of the "narrow view of science". PETRIE (1972) and also LUNDGREN (1973) discuss this issue in relation to pedagogical research.

8. As several of the approaches mentioned (cf. pp. 16-17) focus on different aspects of the teaching process it has - as noted - been proposed that different systems of observation might be combined. Although some superficial similarities and links may be existent the differences may well make such combinations theoretically meaningless, in spite of opposite claims (cf. e.g. FLANDERS, 1973b).

9. The concept of frame as defined by BERNSTEIN (1971) has certain similarities to the same concept as used earlier in this paper (cf. pp. 10-12). In earlier papers I have discussed the relations between BERNSTEIN'S concept of frame and the one used earlier in this paper (cf. KALLÓS, 1973a; 1973b; 1974; 1975b). The concept of frame as used in these earlier papers was developed from ideas originally presented by DAHLLÖF (e. g. 1971).
The basic similarity between the "two" concepts of frame discussed here is that both refer to constraints ultimately also influencing the nature of the pedagogical relationship. The emphasis is on the power and control mechanisms that lead to a certain set of frames. The notions about frames in the earlier parts of this paper in a general way would also fit in with the concept of frame as used by BERNSTEIN. It should furthermore be emphasized that the concept of frame (together with the concept of classification, too) is linked to the question of why knowledge is distributed, transmitted, controlled etc. as it is in a particular case. We agree that it reflects the power distribution, the principles of social control within the society, which, of course, in a capitalist society might be given a more precise meaning (cf. also BERNSTEIN, 1975). These ideas may, finally, be linked to those of e.g. BOURDIEU and PASSERON (1970) as was discussed in a recent paper (KALLÓS, 1975b).

10. The constraining and directive influence of textbooks on teaching was clearly demonstrated by LUNDGREN (1972). The planning by the teachers in that study was clearly dominated by the organization of contents and the selection of contents by the textbook authors, who in their turn may be conceived as legitimized intepreters of the official national curriculum guide in Sweden. The rules for adoption of a textbook are further regulators in this case.

11. The issue of contents is treated at length in the book describing the system developed by BELLACK (BELLACK et al, 1966) to mention one example contrary to the tendency mentioned. Interestingly enough the subject matter was thought to be under control in the empirical studies conducted by BELLACK and his associates. In reality teachers were quite similar as to how they taught in terms of moves and cycles but differed widely in their treatment of the topic where no major differences were expected.

12. It should be reiterated that this view is controversial, and may be criticized from different startingpoints (cf. KLIEBARD, 1970). The Tyler-Rationale should not be identified with the behavioral-objectives approach, which is but a special case of it.

13. The description by ESLAND (1971) of the "psychometric model" is similar to what FREIRE (1972) discusses under the heading "The banking concept in education". The linking to the psychometric tradition within pedagogics by ESLAND opens up other perspectives too, as it illuminates the merger between research traditions in pedagogics at the level of teaching. That an epistemology is "false" and might be criticized as is the case with the "psychometric model" does not mean that the application of it is impossible or even "dys-functional". The power and control mechanisms in operation permits not only permit teaching based upon this model but actually promotes it. We have stressed that we regard schools are functioning rather well. This is partly due to the fact that a "false consciousness" is upheld in teachers and students via the power and control mechanisms installed (cf. note 2).

14. Thus it has been proposed that entire curricula should be built up around a certain pedagogical relationship, such as the "dialogue". Such a view is in most instances coupled with notions about e.g. "creativity", "development", "self-realization" etc. Ideological language flourishes and the actual meaning of schooling becomes invisible and its class origins more hidden and mystified. The present developments within the Swedish pre-school system is a pertinent example as noted by KÖHLER (1975). This tendency is also ocurring within the comprehensive school. Recent trends at the university level (cf. p. 25) may also be mentioned in this context.

15. A good example is the liberal slogan voiced by POSTMAN and WEINGARTNER (1971) about "Teaching as a Subversive Activity". In the entire book teaching and schooling are described and discussed as autonomous entities (cf. note 2).

16. This strongly implies that classification and framing (BERNSTEIN's terms) are but expressions on the level of educational knowledge codes of yet other forces in society which in their turn reflect power relations within the state as expressed at the political and economical level. The concept of frame as used in the foregoing section (cf. pp. 10-12) makes this aspect more directly visible.

17. The relations between curriculum and teaching was briefly discussed in an earlier paper (KALLÓS, 1975b). A monograph on curriculum also dealing with the relations between curriculum and teaching in greater detail using recent Swedish developments as an example is forthcoming (KALLÓS and LUNDGREN, 1976).

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